



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

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Secretary

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August 25, 2016

Sean M. Gouvin  
Baystate Medical Center  
759 Chestnut Street  
Springfield, MA 01199

**RE: Springfield**  
Transmittal No.: X268254  
Application No.: WE-16-004  
Class: *SM79-R*  
FMF No.: 130232  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Gouvin:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of a new natural gas-fired Solar Mercury, Model 50-6400R combustion turbine at your hospital located at 759 Chestnut Street in Springfield, Massachusetts ("Facility"). The Application bears the seal and signature of John Sweet, Massachusetts Registered Professional Engineer Number 37867.

MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

## **1. DESCRIPTION OF FACILITY AND APPLICATION**

Baystate Medical Center (BMC) is the City of Springfield's major referral hospital and only emergency critical care facility. It has 716 beds. The facility currently has a restricted emission status #1-R-10-010, issued June 24, 2010, to restrict the facility's potential emissions to below major source thresholds for nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>).

The facility currently operates six boilers which provide all the steam for the medical center, including space heating, air conditioning, sterilization, laundry, kitchen services, etc. Electricity is purchased from the grid.

Three of the existing boilers are each rated at 33.6 million British thermal units per hour (MMBtu/hr) and were approved pursuant to Plan Approval #PV-77-C-006, issued November 8, 1977. The boilers were originally approved to use #6 fuel oil. However, BMC has submitted a letter to MassDEP dated June 27, 2016, which states that they are withdrawing their right to burn #6 fuel oil effective on December 1, 2017. The boilers will be converted from #6 fuel oil to ultra low sulfur distillate (#2) fuel oil. The boilers also have the existing capability to use natural gas.

The other three existing boilers are each rated at 21.4 MMBtu/hr while firing natural gas and/or #2 fuel oil and operate in accordance with the MassDEP Environmental Results Program (ERP) pursuant to 310 CMR 7.26(30). In addition, the facility has six-#2 fuel oil-fired emergency reciprocating internal combustion engines (RICE) of various sizes.

BMC is proposing to construct and operate a new combined heat and power (CHP) system to provide additional steam, hot water and on-site electrical generation capability to enhance BMC's ability to operate self-sufficiently in the event of future potential disasters.

The proposed CHP system will consist of a nominal 4.5 megawatt, natural gas-fired, Solar Mercury Model 50-6400R, or equivalent, combustion turbine (Emission Unit 30) with thermal energy recovered in a heat recovery steam generator (HRSG) which will be equipped with an Eclipse, or equivalent, natural gas-fired low NO<sub>x</sub> duct burner. The duct burner will have a maximum heat input rate of 9.9 MMBtu/hr based on the higher heating value (HHV). (Note: All heat input rates contained in this document are based on the HHV). The duct burner will provide additional heat input to produce additional steam and hot water as needed. The duct burner will always be operated with the combustion turbine since it has no source of combustion air other than the combustion turbine exhaust. The steam produced by the CHP system will replace steam that would have normally been produced by the three existing 33.6 MMBtu/hr boilers. The CHP system, without the additional heat input from the duct burner, will replace a maximum of 13,123 pounds per hour of steam.

The combustion turbine is subject to the MassDEP Environmental Results Program (ERP) for Engines and Turbines pursuant to 310 CMR 7.26(43)(a) since the turbine has a rated power output equal to or less than ten megawatts. However, the combustion turbine is unable to comply with the NO<sub>x</sub>, carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) emission limitations

specified in Table 3 and 4 of 310 CMR 7.26(43). As an alternative, BMC has proposed to comply with 310 CMR 7.26(45), which provides a methodology whereby emission credits for thermal output are utilized in determining compliance of a CHP installation with the combustion turbine emission limitations contained in 310 CMR 7.26(43)(b). In order to utilize emission credits related to thermal output, the CHP system must meet the eligibility requirements of 310 CMR 7.26(45)(a) which includes a requirement, among others, to comply with the plan approval application requirements of 310 CMR 7.02(5)(c) pursuant to 310 CMR 7.26(45)(a)3. Therefore, BMC has submitted a non-major comprehensive plan application which satisfies the requirements of 310 CMR 7.02(5)(c).

As stated in 310 CMR 7.26(45)(b), a CHP system that meets the eligibility requirements of 310 CMR 7.26(45)(a) may receive a compliance credit against its actual emission based on the emissions that would have been created by a conventional separate system used to generate the same thermal output. The credit will be subtracted from the actual emission rate of the combustion turbine for the purpose of calculating compliance with the emission limitations contained in 310 CMR 7.26(43)(b).

The duct burner in the HRSG is exempt from the plan approval requirements of 310 CMR 7.02 pursuant to 310 CMR 7.02(2)(b)15.a. since it has a maximum heat input rate less than 10 million Btu per hour while firing natural gas only.

The exhaust gases from EU 30 will be vented through a 4 foot diameter stack, the top of which is at least 20 feet above the roof and 60 feet above the ground. The stack gas exit velocity range will be between 52 and 65 feet per second at 100% load.

The project will also include a new #2 fuel oil-fired emergency generator which will not be subject to plan approval since it will be certified pursuant to the MassDEP ERP for Emergency Engines and Turbines at 310 CMR 7.26(42).

### **Regulatory Applicability**

#### **Best Available Control Technology – 310 CMR 7.02(8)(a)2.**

The combustion turbine is subject to and must satisfy the best available control technology (BACT) requirements of 310 CMR 7.02(8)(a)2.

Since the combustion turbine has proposed to comply with 310 CMR 7.26(45), 310 CMR 7.26(45)(b)7. states that the requirements of BACT are satisfied by applying the methodology for determining emission credits specified in 310 CMR 7.26(45) for the purpose of complying with the combustion turbine emission limitations set forth in 310 CMR 7.26(43)(b).

Pursuant to 310 CMR 7.26(45)(b)6. BMC calculated each of the combustion turbine emission credits for NO<sub>x</sub>, CO and CO<sub>2</sub> according to the formula below:

$$\text{Credit} \left( \frac{\text{pounds}}{\text{megawatt} - \text{hour}_{\text{emission}}} \right) = \frac{\text{boiler limit (lbs/MMBtu)}}{\text{boiler efficiency}} \times \frac{3.412 \text{ MMBtu/megawatt} - \text{hour}_{\text{thermal energy}}}{\text{power} - \text{to} - \text{heat ratio}}$$

The numerical values used for the boiler limit (lbs/MMBtu), boiler efficiency and power-to-heat ratio are discussed in the following paragraph.

Since the CHP system will produce steam that would normally have been produced by the three existing 33.6 million Btu per hour boilers, BMC used historic emission rates from the 33.6 million Btu per hour boilers, while firing natural gas, to determine the boiler limits for NO<sub>x</sub>, CO and CO<sub>2</sub> which is in accordance with 310 CMR 7.26(45)(b)1.b. The historic emission rates from the boilers were determined by BMC to be 0.095 lb of NO<sub>x</sub>/MMBtu of heat input, 0.080 lb of CO/MMBtu of heat input and 104.952 lb of CO<sub>2</sub>/MMBtu of heat input. The NO<sub>x</sub> and CO emission rates were based on the facility's source registration data and the CO<sub>2</sub> emission rate was based on climate registry data. BMC also used a boiler thermal system efficiency of 80% and the CHP system power to heat ratio of 1.147 (4.393 megawatt<sub>electrical</sub>/3.829 megawatt<sub>thermal</sub>). The power to heat ratio of the CHP system was based on a gross electrical output of 4.393 megawatt<sub>electrical</sub> and a gross thermal output of 3.829 megawatt<sub>thermal</sub>. Based on this information, the following emission rate credits were calculated by BMC using the formula provided above.

Emission	Emission Rate Credit (pounds/megawatt-hour)
Nitrogen Oxides	0.354
Carbon Monoxide	0.297
Carbon Dioxide	390.219

Pursuant to 310 CMR 7.26(45)(b)5., the emission rate credit, as shown in the table above, will be subtracted from the actual emission rate of the combustion turbine to produce an emission rate which will be used to determine the compliance status with the combustion turbine emission rate limitations specified in 310 CMR 7.26(43)(b).

BMC has not requested any operational limitations to restrict the potential to emit of the CHP system since they intend to be allowed to operate at the maximum heat input rate and 8760 hours per year. The annual air contaminant emissions from the turbine and the duct burner operating at their respective maximum heat input rates and 8760 hours per year were calculated by BMC and are listed in the following table.

Air Contaminant	Duct Burner Emission Rate	Combustion Turbine Emission Rate	Total Project (Combustion Turbine plus Duct Burner)
	(Tons per year)	(Tons per year)	(Tons per year)
NO <sub>x</sub>	3.47	4.74	8.21
CO	4.34	5.8	10.14
SO <sub>2</sub>	0.03	0.8	0.83
PM <sub>10</sub>	0.33	1.7	2.03
PM <sub>2.5</sub>	0.33	1.7	2.03
HAPs	0.08	0.265	0.345

New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

According to BMC, the new combustion turbine and duct burner are subject to the requirements of 40 CFR Part 60 Subpart KKKK, Standards of Performance for Stationary Combustion Turbines pursuant to 60.4305(a). The combustion turbine and duct burner will be more than capable of complying with the applicable Subpart KKKK emission limits for NO<sub>x</sub> and SO<sub>2</sub>. The applicable NO<sub>x</sub> and SO<sub>2</sub> emission limits are specified in Table 1 of Subpart KKKK and 40 CFR 60.4330(a)(2), respectively.

Since MassDEP has not accepted delegation of 40 CFR Part 60 Subpart KKKK for sources which are not subject to 310 CMR 7.00: Appendix C (Operating Permit sources), the facility is advised to consult with the USEPA for additional information. There may be additional notification, recordkeeping and reporting requirements. The address is USEPA-Air Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts, 02114-2023

The facility is not a major source of hazardous air pollutants (HAPs) since the facility-wide potential to emit from all the existing stationary sources at the facility, including the proposed CHP system and emergency generator, is less than 10 tons of any individual HAP in any 12 consecutive month period and less than 25 tons of any combination of HAPs in any 12 consecutive month period. Therefore, the combustion turbine is not subject to 40 CFR Part 63 Subpart YYYY - National Emissions Standards for Hazardous Air Pollutants for Combustion Turbines, because this subpart applies only to major sources of hazardous air pollutants.

Other Applicable Regulations

In addition to being subject to the BACT requirements of 310 CMR 7.02(8)(a)2, the combustion turbine is subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

### **Ambient Air Quality Impact Analysis**

An air quality computer dispersion modeling analysis was performed using USEPA approved AERMOD model to demonstrate that the predicted air quality impacts of criteria pollutants associated with the operation of the CHP system (includes the emissions from the combustion turbine and duct burner) will comply with the National Ambient Air Quality Standard (NAAQS). The air quality analysis was reviewed by MassDEP.

The modeling results are based on the CHP system pollutant emission rates and stack parameters proposed by BMC, plus any existing combustion sources having a heat input rate equal to or greater than 10 MMBtu/hr. The existing combustion sources that were modeled include:

- Three boilers each rated at 33.6 MMBtu/hr of heat input, using #2 fuel oil and exhausting through a common stack
- Three boilers each rated at 21.4 MMBtu/hr of heat input, using #2 fuel oil and exhausting through a common stack
- One - #2 fuel oil-fired emergency RICE rated at 14.2 MMBtu/hr of heat input
- Two - #2 fuel oil-fired emergency RICES each rated at 14.4 MMBtu/hr of heat input

### **Type of Model**

The air quality modeling analysis was performed with the latest version (15181) of the USEPA AERMOD with USEPA's recommended regulatory default options and its various data pre-processors including AERMET Version 13350.

An urban classification for the area for modeling purposes was recommended by MassDEP based on prior modeling for an industrial facility in the area. This is the correct classification and resulted in the model using the correct dispersion coefficients in the analysis. An urban population of 153,700 and urban roughness length of 1.0 meter were utilized in the modeling.

BPIPPRM version 04274 was used to perform a Good Engineering Practices (GEP) stack height analysis on the main stack and calculate building-specific downwash parameters for all modeled stacks based on the significant structures at the hospital within the region of influence. There were no significant buildings nearby off-site to include in the analysis. It was verified that the input files included the building-specific parameters.

For modeling nitrogen dioxide (NO<sub>2</sub>), the Tier 2 default ARM method was employed. This allows scaling of initial modeling results to reflect 80% conversion of NO<sub>x</sub> to NO<sub>2</sub> for the 1-hour averaging period and 75% conversion for the annual averaging period.

### **Meteorological Data**

Meteorological inputs consisted of five years (2008-2012) of sequential surface and upper air observations from Barnes Regional Airport in Westfield and Albany, New York, respectively. This data was provided by MassDEP. One-minute ASOS data processing was utilized with AERMINUTE version 11325 to reduce the number of calm wind hours. AERSURFACE version 13106 was used to determine the surface characteristics and roughness length of the area in

twelve 30- degree sectors out to 1 kilometer. AERSURFACE was also used to determine Bowen ratio and albedo based on average characteristics over a 10 kilometer by 10 kilometer square centered on the meteorological data collection site in accordance with USEPA's AERSURFACE User's Guide (revised January 2013). Default options were used when running AERMET version 13350.

#### Selected Air Quality Monitors

MassDEP air quality monitors in Springfield were used for estimating background concentrations for NO<sub>2</sub>, particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM<sub>10</sub>), particulate matter with an aerodynamic diameter equal to or less than 2.5 microns (PM<sub>2.5</sub>), CO and SO<sub>2</sub>. These Springfield monitors are located 1 mile to the southeast of the facility and are considered as a representative measure of the air around the facility.

#### Receptor Network

A nested Cartesian coordinate (i.e., rectangular) receptor grid consisting of 3,064 discrete receptors were employed for the modeling analysis. Receptors were located 25 meters apart out to 200 meters, 50 meters apart from 200 meters to 500 meters, 100 meters apart from 500 meters to 2 kilometers, 250 meters apart from 2 kilometers to 3 kilometers, 500 meters apart from 3 kilometers to 5 kilometers and 1,000 meters apart from 5 kilometers to 10 kilometers. "On property" receptors spaced at 25 meters were also employed in areas with public access. The spacing and horizontal extent of this receptor array was more than adequate for this modeling analysis.

Actual terrain elevations for each receptor were obtained from the USGS National Elevation Dataset (NED) and processed using the AERMAP preprocessor.

#### Background Air Quality

Model predicted air quality impacts were added to background concentrations to estimate the total air quality impact from the project. Air pollutant background concentrations were conservatively estimated for the air quality analysis. The methodology is consistent with USEPA and MassDEP guidance. MassDEP guidance specifies the use of the most-recent 3-year period (2012-2014) of available monitoring data representative of the Project site. A summary of the air monitoring data and the selected background values are shown in Table 3-1 of ERM's revised modeling report (dated July 2016).

#### Air Dispersion Modeling Results

Table 4-1 in ERM's revised modeling report (dated July 2016) presents the modeling results, which are fully compliant with the criteria pollutant NAAQS. The total impact represents the combined maximum model-predicted concentrations from all modeled sources at BMC (i.e., the CHP system plus all combustion units greater than 10 MMBtu/hr heat input) plus background levels. A portion of the table is reproduced below:

Pollutant	Averaging Period	Total Impact	NAAQS
		(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
NO <sub>2</sub>	1-hr	125.8	188
	Annual	36.6	100
SO <sub>2</sub>	1-hr	30.2	196
	3-hr	38.2	1,300
	24-hr	19.7	365
	Annual	6.0	80
PM <sub>10</sub>	24-hr	38.1	150
PM <sub>2.5</sub>	24-hr	26.7	35
	Annual	9.6	12
CO	1-hr	2,355	40,000
	8-hr	1,756	10,000

As shown in the table above, the total impact concentrations from the facility will neither cause nor contribute to a condition of air pollution with respect to NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and CO.

#### Conclusion

As demonstrated by the modeling analysis, the air contaminant emissions from the proposed CHP project, in combination with the existing combustion sources greater than 10 MMBtu/hr heat input described above, will not cause or significantly contribute to violations of the NAAQS for NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and CO.



## 2. **EMISSION UNIT IDENTIFICATION**

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
30	Solar Mercury Model 50-6400R, or equivalent, Combustion Turbine	<ul style="list-style-type: none"><li>• Maximum 58.8 million Btu per hour of heat input</li><li>• Maximum 5,409 Kilowatts</li></ul>	Ultra Low SoLoNOx Combustor

**Table 1 Key:**

EU = Emission Unit Number

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

<b>Table 2</b>			
<b>EU</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit</b>
30	1. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, EU 30 shall be fired using only natural gas.  2. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, EU 30 shall not exceed 58.8 million Btu per hour of heat input.  3. The Permittee shall not burn in EU 30 any fuel which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input, as specified in 40 CFR 60.4330(a)(2).	NOx <sup>1</sup>	5 ppmvd @ 15% O <sub>2</sub> 0.0184 lb/MMBtu 0.18 lbs/MW-hr
		CO <sup>1</sup>	10 ppmvd @ 15% O <sub>2</sub> .0224 lb/MMBtu 0.22 lbs/MW-hr
		Carbon Dioxide <sup>1</sup>	110 lb/MMBtu 1083 lbs/MW-hr
		Smoke	310 CMR 7.06(1)(a): < No. 1 of Chart <sup>2</sup> , except No. 1 to < No. 2 of Chart for ≤ 6 minutes during any one hour
		Opacity	310 CMR 7.06(1)(b): ≤ 20%, except >20% to ≤ 40% for ≤ 2 minutes during any one hour

#### Table 2 Key:

EU = Emission Unit Number

CO = Carbon Monoxide

CO<sub>2</sub> = Carbon Dioxide

NOx = Nitrogen Oxides

SO<sub>2</sub> = Sulfur Dioxide

lb/MMBtu = pound per million British thermal unit of heat input

lbs/MW-hr = pounds per megawatt hour

ppmvd = parts per million by volume, dry basis

ng = nanogram

J = Joule

CMR = Code of Massachusetts Regulations

#### Table 2 Notes

1. Compliance with the ppmvd, lb/MMBtu and lb/MW-hr emission limits for NOx, CO, and CO<sub>2</sub> in Table 2 herein shall be based on the results of an applicable USEPA Reference Test Method.

2. Chart means the Ringelmann Scale for grading the density of smoke, as published by the United States Bureau of Mines and as referred to in the Bureau of Mines Information Circular No. 8333, or any smoke inspection guide approved by MassDEP.

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
30	1. MassDEP may require emission or other monitoring to assure compliance with the emission rate limitations contained in Table 2 herein.
	2. EU 30 shall be equipped with a fuel meter which is capable of continuously monitoring the fuel flow rate.
	3. EU 30 shall be equipped with instrumentation which is capable of continuously monitoring the hours of operation.
	4. The Permittee shall conduct annual compliance stack testing (no more than 14 calendar months following the previous performance test) for NO <sub>x</sub> , CO and CO <sub>2</sub> while EU30 is operating at or near design capacity to determine the compliance status with the emission limitations, as specified in Table 2 above, in accordance with procedures set forth in Appendix A of 40 CFR Part 60 or another method approved by the MassDEP and USEPA. The initial compliance stack test shall be performed within 90 days of continuous operation of EU 30.
	5. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.
	6. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

**Table 3 Key:**

EU = Emission Unit Number  
 CMR = Code of Massachusetts Regulations  
 NO<sub>x</sub> = Nitrogen Oxides  
 CO = Carbon Monoxide

USEPA = United States Environmental Protection  
 Agency  
 CO<sub>2</sub> = Carbon Dioxide

**Table 4a**

EU	Recordkeeping Requirements
30	<ol style="list-style-type: none"> <li>1. The Permittee shall maintain the following records: <ol style="list-style-type: none"> <li>a. Information on equipment type, make and model, and maximum power output; and</li> <li>b. A monthly log of hours of operation, amount of fuel consumed, fuel type, heating value, and sulfur content; and</li> <li>c. A monthly calculation of the total hours operated and the amount of fuel consumed in the previous 12 months shall be kept on site; and</li> <li>d. Purchase order, invoices and other documents to support information in the monthly log; and</li> <li>e. Copies of certificates and documents from the manufacturer related to certificates.</li> </ol> </li> <li>2. The Permittee shall record, with a fuel meter, the amount of fuel combusted in EU 30.</li> <li>3. The Permittee shall record, as specified in 40 CFR 60.4365(a): <ol style="list-style-type: none"> <li>a. the fuel quality characteristics in a current, valid purchase contract or tariff sheet for the fuel, specifying that the total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions of less than 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input; or</li> <li>b. Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input. At a minimum the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR Part 75 is required.</li> </ol> </li> <li>4. The Permittee shall maintain adequate records on-site to determine the compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15<sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a>.</li> <li>5. The Permittee shall maintain records of monitoring and testing as required by Table 3.</li> <li>6. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU approved herein on-site.</li> <li>7. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.</li> <li>8. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.</li> </ol>

Table 4b	
EU	Recordkeeping Requirements
30	9. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	10. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	11. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4a/4b Key:**

EU = Emission Unit Number  
 CMR = Code of Massachusetts Regulations  
 SO<sub>2</sub> = Sulfur Dioxide  
 ng SO<sub>2</sub>/J = nanograms of sulfur dioxide per Joule  
 lb SO<sub>2</sub>/MMBtu = pounds of sulfur dioxide per  
 million British thermal unit of heat input

SOMP = Standard Operating and Maintenance  
 Procedure  
 USEPA = United States Environmental Protection  
 Agency

Table 5	
EU	Reporting Requirements
30	1. The Permittee shall notify MassDEP, in writing, the date on which EU 30 commences operation at the facility. This notice shall be provided to MassDEP within (5) days of commencing operation.
	2. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	3. The Permittee shall notify the Western Regional Office of MassDEP, BAW Compliance & Enforcement Chief by telephone: 413-755-2131, email: saadi.motamedi@state.ma.us, or fax : 413-784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 or Table 6, condition #2 requirements. A written report shall be submitted to Compliance & Enforcement Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.

**Table 5 Key:**

EU = Emission Unit Number  
 BAW = Bureau of Air and Waste  
 CMR = Code of Massachusetts Regulations

#### 4. SPECIAL TERMS AND CONDITIONS

- A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>									
<b>EU</b>	<b>Special Terms and Conditions</b>								
30	<p>1. EU 30 shall consist of the equipment specified in Table 1 herein.</p> <p>2. EU 30 shall comply with the applicable nitrogen oxides, carbon monoxide and carbon dioxide emission limitations specified in 310 CMR 7.26(43)(b)4. Table 3 and Table 4 as determined by the procedure specified in Table 6, Condition #3 herein.</p> <p>3. Pursuant to 310 CMR 7.26(45)(b)5., compliance with the nitrogen oxides, carbon monoxide and carbon dioxide emission limitations specified in 310 CMR 7.26(43)(b)4. Table 3 and Table 4 shall be determined by subtracting the following emission rate credits from the actual emission rate of EU 30.</p> <table border="1"> <thead> <tr> <th>Emission</th><th>Emission Rate Credit (pounds per megawatt-hour)</th></tr> </thead> <tbody> <tr> <td>Nitrogen oxides</td><td>0.354</td></tr> <tr> <td>Carbon monoxide</td><td>0.297</td></tr> <tr> <td>Carbon dioxide</td><td>390.219</td></tr> </tbody> </table> <p>4. EU 30 shall be operated and maintained in accordance with the manufacturers recommended operating and maintenance procedures.</p> <p>5. EU 30 shall be constructed, located, operated and maintained in a manner to comply with the requirements of 310 CMR 7.10: <i>Noise</i>.</p> <p>6. If EU 30 commences operation prior to December 1, 2017, EU 30 shall not operate at any time that #6 fuel oil is being fired in any of the three existing 33.6 million British thermal units per hour (MMBtu/hr) boilers (approved pursuant to Plan Approval #PV-77-C-006, issued November 8, 1977).</p> <p>7. EU 30 may be subject to Subpart KKKK the federal Standards of Performance for Stationary Combustion Turbines, 40 CFR Part 60.4300 through 60.4420. Since MassDEP has not accepted delegation for 40 CFR Part 60 Subpart KKKK for sources which are not subject to 310 CMR Appendix C (Operating Permit sources), the facility is advised to consult with the USEPA for additional information. There may be additional notification, recordkeeping and reporting requirements. The address is USEPA-Air Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts, 02114-2023</p>	Emission	Emission Rate Credit (pounds per megawatt-hour)	Nitrogen oxides	0.354	Carbon monoxide	0.297	Carbon dioxide	390.219
Emission	Emission Rate Credit (pounds per megawatt-hour)								
Nitrogen oxides	0.354								
Carbon monoxide	0.297								
Carbon dioxide	390.219								
Facility-wide	8. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval.								

**Table 6 Key:**

CFR = Code of Federal Regulations

CMR = Code of Massachusetts Regulations

EU = Emission Unit Number

USEPA = United States Environmental Protection Agency

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Dimensions (feet)</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
30	60	4	52-65 @ 100% load	250

**Table 7 Key:**

EU = Emission Unit Number

°F = Degree Fahrenheit

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.



Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Cortney Danneker by telephone at 413-755-2234, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Marc Simpson  
Air Quality Permit Chief  
Bureau of Air and Waste

ecc: MassDEP/Boston - Yi Tian  
MassDEP/WERO – Peter Czapienski